

of the diet, be adequate to produce signs of cure in a case of riboflavin deficiency. It must be remembered that riboflavin, nicotinic acid, pyridoxin, pantothenic acid, choline, and folic acid are some of the known factors present in any extract such as marmite which, together or alone, may be responsible for any observed therapeutic effects.

Summary

Scrotal dermatitis was a common complaint among prisoners of war in Malaya six months after captivity. It was noted that no cases of scrotal dermatitis occurred when the riboflavin content of the diet was maintained at a sufficiently high level.

A description of the different types of deficiency scrotal dermatitis seen is given, together with the associated vitamin-deficiency diseases.

Previous workers who have described the complaint have suggested that it is due to a deficiency of the riboflavin content of the diet. The curative effect of marmite (or vegemite) was found to be specific in mild uncomplicated cases.

I wish to thank Dr. John Freeman and Dr. H. Scarborough for their advice and encouragement.

Addendum. Since writing the above description of deficiency scrotal dermatitis this condition has also been commented on by Sefton, L. (*Brit. J. Derm. Syph.*, 1947, 59, 85).

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STREPTOMYCIN IN BUBONIC PLAGUE

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In 1947 bubonic plague broke out suddenly in Haifa and later spread to Affula, a village 30 km. to the south-east. The outbreak was suppressed quickly by the extensive use of D.D.T., but it gave us the opportunity of observing the effect of streptomycin in three severe cases. As little experience has been gained in the use of this antibiotic against plague (Herbert, 1947; Karamchandi and Rao, 1948) a brief report on our observations may be justified in spite of the small number of cases presented.

The outbreak started explosively. The first case, the only fatal one, was admitted to hospital on June 23, 1947. Within the next 13 days 13 more cases, all from Haifa, were admitted, and there were 3 from Affula on July 19.

Sulphonamides, especially sulphadiazine, which is now considered the most potent sulpha compound against plague (Platzer, 1946; Huangl and Chu, 1946), were administered as a routine to all cases. Where possible the initial dose was 2 g., given orally, followed by 1 g. every four hours during the acute stage. Later, smaller

quantities were given until the bubo healed. Results were favourable on the whole, but the condition of three patients, admitted when very seriously ill, deteriorated rapidly in spite of treatment. It was decided, therefore, to administer streptomycin. The results in all three cases were remarkably good.

Case Records

Case 1.—A male Arab aged 20 was admitted to hospital in July, 1947, with the history that three days previously he had had a severe rigor, a rise of temperature up to 39° C., and an intense headache. On the following day, on discovering a painful lymphadenitis in the right groin, his physician placed him on 400,000 units of penicillin daily. In spite of this his condition deteriorated and severe continuous vomiting started. The day before admission he became delirious.

On admission his pulse was 124, respirations 26, and temperature 40° C.; he was delirious and was vomiting. His face was haggard, the conjunctivae injected, the tongue dry and heavily coated. In the right inguinal region there was a tender solitary lymph gland the size of an almond, but the skin over it was not inflamed. Bubo puncture fluid was positive for *Pasteurella pestis*.

The patient was given a course of "soludagenan" (soluble sulphapyridine) 1 g. intravenously every four hours. Nothing could be given by mouth on account of the vomiting, therefore glucose and normal saline were also administered intravenously.

On the same evening his general condition deteriorated and streptomycin 200 mg. was administered every three hours. The following morning the temperature dropped to 38° C. and in the evening it was normal. The patient, though still vomiting occasionally, was so much better that he was able to sit up in bed. Streptomycin was therefore discontinued on July 9. As the temperature rose 24 hours later, a further 2 g. was given. From this stage recovery was uneventful. The bubo resolved and the patient was discharged on July 16.

Case 2.—A male Arab 8½ years old became ill on June 28, 1947, with a sudden and severe rigor, fever, vomiting, and headache. On June 29 he developed a painful swelling in the left groin, for which he received 1 g. of sulphathiazole thrice daily for 6 days. As there was no clinical improvement he was referred to hospital.

On admission on July 4 his temperature was 39.5° C. and pulse 130; his face was congested, the eyes were bloodshot, and breathing was rapid and shallow. He was conscious but apathetic, and vomited repeatedly. The left inguinal glands were enlarged, tender, and inflamed. Bubo puncture fluid was found positive on direct smear and culture. Sulphadiazine 4 g. daily was prescribed.

The day after admission his condition became worse. The pulse was thready and vomiting continued, and he was incontinent of urine. On July 6 his condition deteriorated further; his temperature was 40° C. and delirium had set in. Streptomycin 200 mg. every three hours was therefore started at 8 a.m. By 4 p.m. the same day the temperature had fallen to 37.5° C. and the vomiting had ceased. Improvement was maintained during the next three days, during which the patient fed and took an interest in his surroundings. On July 10 his temperature rose again to 38° C. and an intermittent fever was maintained until July 14, when fluctuations became evident in the bubo, which was then incised. After that recovery was uneventful and the patient was discharged on July 26. Streptomycin had been discontinued on July 17.

Case 3.—A male Jew aged 35 was admitted to hospital on July 19, 1947, on the fourth day of his illness, which had started with a rigor followed by fever and vomiting. A painful swelling appeared in the left groin on the second day of the disease. The patient had been given sulphathiazole and penicillin for two days without effect.

On admission his temperature was 39.5° C., pulse 120, and respirations 24. The patient looked very ill. His face was congested, his tongue was heavily coated, and he complained of a very severe headache. In the left inguinal region there was a large hard swelling which was inflamed and tender. *P. pestis* was cultured from the bubo puncture. The patient was given sodium sulphathiazole 1 g. every four hours intravenously.

Two days after admission his condition grew worse: consciousness was clouded, the pulse 130, and respirations rapid and shallow. The bubo was larger, and inflammatory oedema extended from the middle of the thigh to the umbilicus. He was given 300 mg. of streptomycin every three hours, but 24 hours later his condition was still serious. Although his temperature had dropped to 38° C. his pulse became thready, his finger-tips bluish, and he was dyspnoeic. On July 23 there was a marked general improvement. The patient felt much better, his pulse rate was 92, he was no longer dyspnoeic, and he was on the way to recovery. Streptomycin was continued until July 27. The bubo was still painful, but the abdominal oedema had subsided. On August 16 fluctuations became evident and a thick purulent discharge was evacuated. The final healing of the wound was delayed until Sept. 9, but the patient felt very well until his discharge.

Summary

Streptomycin treatment of three very severe cases of plague not responding to sulphonamides resulted in speedy recovery. A fourth severe case was not treated with streptomycin, and the patient died on the eighth day of his illness.

Whereas the effect of streptomycin on the general condition of the patients was remarkably good, the buboes appeared to be uninfluenced if treated late. This was true also in respect of the sulphonamides, and in most cases incision and drainage were necessary to bring about resolution.

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SOLITARY MYELOMA OF THE MANDIBLE

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The myeloma, or plasmacytoma, is a tumour of plasma cells which usually produces multiple lesions, causing a systemic affection of the body. As distinct from generalized myelomatosis of bone, the solitary myeloma is not uncommon in the nasopharynx and in single bones such as a vertebra or clavicle. Very few references, however, can be found on lesions of the jaw affected by the solitary type of myeloma.

William Tennent (1945) in a survey of 49 cases does not mention a single tumour of the mandible. No reference to the mandible as a site of myeloma is found in Beattie and Dickson's *Textbook of Pathology*. Because of the paucity of information existing in the literature concerning the solitary myeloma of the mandible the following case is recorded.

Case History

A man aged 39 was referred to one of us (R.S.) because of persistent swelling and great pain in the left side of the mandible. He gave a history of pain persisting for three weeks, at first localized in one of the left lower bicuspid and accompanied in the later stages by a slight swelling of the cheek. The tooth was first treated conservatively, but as no relief was obtained it was eventually extracted. The wound failed to heal and pain persisted, with discharge of pus from the socket. A little later the pain assumed a constant and dull character with attacks radiating to the ear and temporal region. These symptoms were accompanied by general malaise.

Inspection of the lower jaw revealed an oedematous inflamed mucous membrane extending from the canine to the molar region on the left side. Pus was draining freely from the wide-open socket of the extracted bicuspid tooth. The wound edges

were lacerated and undermined, and the base was covered with greyish granulations. There was some swelling of the buccal aspect of the mandible, but the lower border was palpable and no fluctuation was present. The process had involved the regional lymph nodes, causing hard and tender nodules, paresis of the left side of the lower lip, and slight trismus.

A lesion measuring 11 mm. in diameter was present in the region of the previously extracted bicuspid tooth. This was of osteolytic character without sharp definition and with little trabeculation. There was no evidence of the presence of root fragments or sequestra. On the strength of the clinical picture and the radiological appearance (Figs. 1 and 2) a tentative diagnosis of osteomyelitis was made and surgical exposure advised.

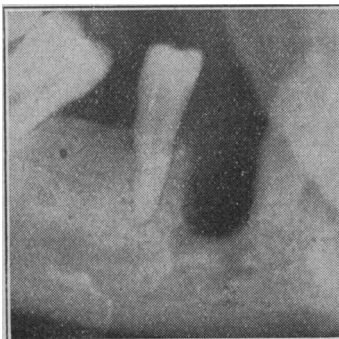


FIG. 1

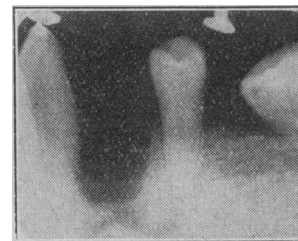


FIG. 2

At operation a large mass of soft granulations of maroon colour which bled freely on manipulation was found in the affected area, extending into and invading the mental foramen and the mandibular canal. It was thus found that encroachment upon the cortex and marrow of the bone of the mandible was far greater than had been suspected from the clinical picture. After thorough curetting of the bone cavity a specimen was taken for histological examination. The biopsy showed a true myeloma. No Bence-Jones proteins were found in the urine. A blood count showed: red cells, 5,000,000 per c.mm.; haemoglobin 88%; oxyhaemoglobin 12.1 g.; white cells, 6,500 per c.mm.

Histology of Tissue from Mandible.—The histology was that of a plasmacytoma, or true myeloma of bone marrow (Fig. 3).

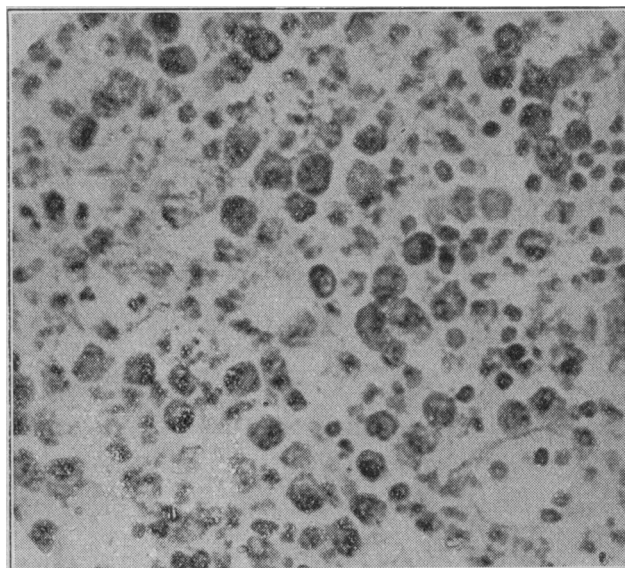


FIG. 3

The material received consisted partly of necrotic bone, the cancellous spaces of which contained collagen fibres, fibroblasts, lymphocytes, and polymorphonuclear leucocytes. There was thus evidence of chronic osteomyelitis associated with tumour formation. Critical examination of the plasma cells which constituted the neoplasm revealed the presence of mitotic figures and of hyperchromatic nuclei in moderate numbers. The identity